

CLAIMS:

1. A method for controlling the order of datagrams, the
datagrams being processed by at least one processing
engine, each of the at least one processing engine
having at least one input port and at least one
output port, wherein each datagram or each group of
datagrams has a ticket associated therewith, the
ticket being used to control the order of the
datagram or group of datagrams at the at least one
input port of the processing engine and at the at
least one output port of the processing engine.
2. A method according to claim 1, wherein the order of
the datagrams or group of datagrams at the at least
one input port corresponds to the order of the
datagrams at the at least one output port.
3. A method according to claim 1, wherein the tickets
comprise numerical values.
4. A method according to claim 1, wherein the ticket
comprises a semaphore with data associated
therewith.
5. A processing engine for processing datagrams in a
predetermined order, the processing engine
comprising at least one input port, at least one
output port and at least one processing element, the
at least one processing element comprising an input
port connected to the at least one input port of the
processing engine, an output port connected to the
at least one output port of the processing engine
and arithmetic and logic means, the order of

processing datagrams being controlled at the at least one input port of the processing engine and the at least one output port of the processing engine by a ticket associated with the datagram or a group of the datagrams.

6. A processing engine according to claim 5, wherein the processing element comprises an element of a multi threaded array processing engine.

7. A processing engine according to claim 5, wherein the processing element can leave or enter the predetermined order.

8. A processing system comprising a plurality of processing engines for processing datagrams in a predetermined order, each processing engine comprising at least one input port, at least one output port and at least one processing element, the at least one processing element comprising an input port connected to the at least one input port of the processing engine, an output port connected to the at least one output port of the processing engine and arithmetic and logic means, the order of processing datagrams being controlled at the at least one input port of the processing engine and the at least one output port of the processing engine by a ticket associated with the datagram or a group of the datagrams.

9. A processing system according to claim 8, wherein datagrams are processed in a round robin manner.

10.A processing system according to claim 8 further comprising a ticket dispenser for giving tickets to a datagram or group of datagrams.

5 11.A processing system according to claim 10, wherein the tickets are issued on a first come first served basis.

10 12.A processing system according to claim 8 further comprising a counter for maintaining the value of the current ticket.

15 13.A processing system according to claim 12, wherein the counter comprises storage means for storing a numerical value.

20 14.A processing system according to claim 13, wherein once a processing element is allocated a datagram or group of datagrams for processing, the counter is incremented.

10074019-050602